

WHAT IS CLAIMED IS:

1 1. For use in communications system coupled to a
2 packet network lacking packet aggregation and fragmentation
3 at intermediate nodes therein, a packet relay for improving
4 bandwidth utilization comprising:

5 a connection to a wireless link;

6 a connection to the packet network; and

7 a packet relay controller intercepting traffic
8 between the wireless link and the packet network and re-
9 formatting the intercepted traffic to employ a first
10 maximum transmission unit size for intercepted traffic
11 forwarded to the packet network and a second maximum
12 transmission unit size for intercepted traffic forwarded to
13 the wireless link.

1 2. The packet relay as set forth in Claim 1 wherein
2 the first maximum transmission unit size is larger than the
3 second maximum transmission unit size.

1 3. The packet relay as set forth in Claim 1 wherein
2 the first maximum transmission unit size is an optimal path
3 maximum transmission unit size for packet communications
4 between the packet relay controller and a final destination
5 within the packet network.

1 4. The packet relay as set forth in Claim 1 wherein
2 the second maximum transmission unit size is suitable for
3 wireless communications.

1 5. The packet relay as set forth in Claim 1 wherein
2 the packet relay controller aggregates packets within
3 intercepted traffic from the wireless link for forwarding
4 to the packet network.

1 6. The packet relay as set forth in Claim 1 wherein
2 the packet relay controller fragments packets within
3 intercepted traffic from the packet network for forwarding
4 to the wireless link.

1 7. The packet relay as set forth in Claim 1 wherein
2 the packet relay controller is an Internet protocol level
3 proxy within an interface between a wireless communications
4 system and an internal packet network for an enterprise
5 operating the wireless communications system.

1 8. A communications system comprising:

2 a wireless communications device employing a
3 wireless link;

4 a packet network lacking packet aggregation and
5 fragmentation at intermediate nodes therein; and

6 a packet relay for improving bandwidth
7 utilization in communications between the wireless
8 communications device and a final destination within the
9 packet network comprising:

10 a connection to the wireless link;

11 a connection to the packet network; and

12 a packet relay controller intercepting
13 traffic between the wireless link and the packet
14 network and re-formatting the intercepted traffic to
15 employ a first maximum transmission unit size for
16 intercepted traffic forwarded to the packet network
17 and a second maximum transmission unit size for
18 intercepted traffic forwarded to the wireless link.

1 9. The communications system as set forth in Claim 8
2 wherein the second maximum transmission unit size is
3 smaller than the first maximum transmission unit size.

1 10. The communications system as set forth in Claim 8
2 wherein the first maximum transmission unit size is an
3 optimal path maximum transmission unit size for packet
4 communications between the packet relay controller and a
5 final destination within the packet network.

1 11. The communications system as set forth in Claim 8
2 wherein the second maximum transmission unit size is
3 suitable for wireless communications.

1 12. The communications system as set forth in Claim 8
2 wherein the packet relay controller aggregates packets
3 within intercepted traffic from the wireless link for
4 forwarding to the packet network.

1 13. The communications system as set forth in Claim 8
2 wherein the packet relay controller fragments packets
3 within intercepted traffic from the packet network for
4 forwarding to the wireless link.

1 14. The communications system as set forth in Claim 8
2 wherein the packet relay controller is an Internet protocol
3 level proxy within an interface between a wireless
4 communications system and an internal packet network for an
5 enterprise operating the wireless communications system.

1 15. For use in communications system coupled to a
2 packet network lacking packet aggregation and fragmentation
3 at intermediate nodes therein, a method of improving
4 bandwidth utilization comprising:

5 intercepting traffic from a wireless link to the
6 packet network;

7 re-formatting the intercepted traffic to employ a
8 first maximum transmission unit size different than a
9 second maximum transmission unit size of the intercepted
10 traffic; and

11 forwarding the re-formatted traffic to the packet
12 network.

1 16. The method as set forth in Claim 15 wherein the
2 step of re-formatting the intercepted traffic to employ a
3 first maximum transmission unit size different than a
4 second maximum transmission unit size of the intercepted
5 traffic further comprises:

6 re-formatting the intercepted traffic to employ a
7 maximum transmission unit size which is larger than the
8 second maximum transmission unit size.

1 17. The method as set forth in Claim 15 wherein the
2 step of re-formatting the intercepted traffic to employ a
3 first maximum transmission unit size different than a
4 second maximum transmission unit size of the intercepted
5 traffic further comprises:

6 re-formatting the intercepted traffic to employ
7 an optimal path maximum transmission unit size for packet
8 communications between an interception point and a final
9 destination within the packet network.

1 18. The method as set forth in Claim 15 wherein the
2 step of re-formatting the intercepted traffic to employ a
3 first maximum transmission unit size different than a
4 second maximum transmission unit size of the intercepted
5 traffic further comprises:

6 re-formatting the intercepted traffic from a
7 maximum transmission unit size suitable for wireless
8 communications.

1 19. The method as set forth in Claim 15 wherein the
2 step of re-formatting the intercepted traffic to employ a
3 first maximum transmission unit size different than a
4 second maximum transmission unit size of the intercepted
5 traffic further comprises:

6 aggregating packets within intercepted traffic
7 from the wireless link for forwarding to the packet
8 network.

1 20. The method as set forth in Claim 15 further
2 comprising:

3 intercepting traffic from the packet network to
4 the wireless link;

5 re-formatting the intercepted traffic from the
6 packet network to the wireless link to employ the second
7 maximum transmission unit size; and

8 forwarding the intercepted traffic re-formatted to
9 employ the second maximum transmission unit size to the
10 wireless link.